

WHAT IS CLAIMED IS:

1. A vibrating gyroscope comprising:
  - a vibrator including at least a pair of vibrating bodies, in which both end portions in a longitudinal direction are fixed together in the width direction by intermediate parts, and the vibrator is constructed such that a secondary bending vibration with both ends free in a thickness direction of the vibrating bodies is generated;
  - a driver making the vibrating bodies generate buckling vibrations in opposite directions relative to each other; and
  - a detector for detecting the magnitude of the secondary bending vibration of the vibrator; wherein
  - the resonance frequency of the secondary bending vibration is close to the resonance frequency of the buckling vibration.
2. A vibrating gyroscope as claimed in claim 1, wherein the vibrating bodies have a substantially rectangular plate shape.
3. A vibrating gyroscope as claimed in claim 1, wherein three nodal points of the secondary bending vibration exist along the longitudinal direction of the vibrator and, out of the three nodal points, the vibrator is supported at the two nodal points located at the ends of the vibrator.
4. A vibrating gyroscope as claimed in claim 1, wherein the vibrating bodies have a unimorph construction.
5. A vibrating gyroscope as claimed in claim 1, wherein the vibrating bodies have a bimorph construction.
6. A vibrating gyroscope as claimed in claim 1, wherein electrodes are disposed on the outside surface of each of the vibrating bodies so as to be disposed

opposite to each other with the vibrator disposed therebetween, and the magnitude of the secondary bending vibration is detected through the electrodes.

7. A vibrating gyroscope as claimed in claim 1, wherein a pair of electrodes are disposed on the outside surface of one of the vibrating bodies so as to be separated from each other in the longitudinal direction and an additional electrode is disposed along substantially an entire length of the vibrator on the outside surface of another of the vibrating bodies and opposite to the pair of electrodes, and the magnitude of the secondary bending vibration is detected through the electrodes.

8. A vibrating gyroscope as claimed in claim 1, wherein electrodes are disposed along substantially an entire length of the vibrator on the outside surface of each of the vibrating bodies so as to be opposed to each other with the vibrator disposed therebetween, and the magnitude of the secondary bending vibration is detected through the electrodes.

9. A vibrating gyroscope as claimed in claim 1, wherein the intermediate parts are metal members disposed between the vibrating bodies.

10. A vibrating gyroscope as claimed in claim 1, wherein a drive electrode and a detection electrode are disposed on the outside surface of each of the vibrating bodies.

11. A vibrating gyroscope as claimed in claim 1, wherein the drive electrode and the detection electrode extend along less than an entire length of the vibrating bodies.

12. A vibrating gyroscope as claimed in claim 1, wherein the drive electrode and the detection electrode extend along an entire length of the vibrating bodies.

13. A vibrating gyroscope as claimed in claim 1, further comprising supporting parts arranged to support the vibrating above a mounting board and to electrically connect the vibrator to electrodes provided on the mounting board.

14. A vibrating gyroscope as claimed in claim 1, wherein the driver includes an adder circuit and an automatic gain control circuit.

15. A vibrating gyroscope as claimed in claim 1, wherein the detector includes a differential circuit, a detection circuit, and a direct current amplifier.

16. A vibrating gyroscope as claimed in claim 1, wherein each of the vibrating bodies have at least two portions which are oppositely polarized.

17. A vibrating gyroscope as claimed in claim 1, wherein at least one of the vibrating bodies is uniformly polarized along an entire length thereof.

18. A vibrating gyroscope as claimed in claim 1, wherein one of the vibrating bodies is an excitation vibration body and another of the vibrating bodies is a detection vibrating body.

19. An angular velocity sensor comprising a plurality of vibrating gyroscopes provided on the same plane, wherein one of the plurality of vibrating gyroscope is arranged to detect a rotating angular velocity having a vertical axis that is substantially perpendicular to the plane as a rotating axis and is a vibrating gyroscope as claimed in claim 1.

20. An angular velocity sensor as claimed in claim 19, wherein three of the vibrating gyroscopes are provided and disposed on the same plane.